REMARKS

This application has been carefully reviewed in light of the Office Action dated December 5, 2003. Claims 1 and 3 have been amended. Applicants reserve the right to pursue the original claims and other claims in this and other applications. Applicants respectfully request reconsideration of the above-referenced application in light of the foregoing amendments and following remarks.

Claims 1-6 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Archie in view of Ausschnitt. The rejection is respectfully traversed.

In the present invention, the respective dimensional characteristic quantities of a first pattern portion and a second pattern portion are monitored relating to characteristic quantities showing edge widths of the resist pattern, against changes in exposure conditions so as to calculate changes in the exposure conditions relating to the focus of a scanning-type electronic microscope. Thus, the invention can achieve accurate measurement by monitoring plural different portions of the same resist pattern. For example, Figs. 6(a) and 6(b) in the present application show changes of edge widths of the first portion and the second portion, and the relations of the edge width and the focus shown in Figs. 7(a) and 7(b) are obtained by combining these changes of edge widths.

Neither Archie nor Ausschnitt teach or suggest that the respective dimensional characteristic quantities of a first pattern portion and a second pattern portion are monitored relating to characteristic quantities showing edge widths of the same resist pattern, against changes in exposure conditions so as to calculate changes in the exposure conditions relating to the focus of said scanning-type electronic microscope.

In Archie, the edge width is calculated based on the difference between the top and bottom of the same portion of the resist pattern, and it is not calculated by measuring the edge width of a first and second portion. Archie discloses calculating the edge width based on the difference between the top and bottom of the same portion of the resist

pattern, and is not calculated relating to plural different portions of the resist pattern. Moreover, the edge width in Archie is analyzed to evaluate the quality of the process, rather than to measure or estimate the relative movement of the focus.

Still further, although Archie is using the edge width as apparent from 106 in Fig. 1, OK/NG of the process is only judged and it is not used in order to measure the relative movement of the focus as in the present invention. The cited reference also discloses the importance of the edge width in order to evaluate the quality of the process (Col. 3, lines 1-4). However, how to measure or estimate the relative movement of the focus concretely is not disclosed.

Ausschnitt is relied upon for calculating the respective dimensional characteristic quantities of the first pattern portion and the second pattern portion thereby correcting the exposure conditions, and adds nothing to rectify the deficiencies associated with Archie. Further, Ausschnitt does not teach or suggest measuring the edge widths as claimed by the Applicants.

In Ausschnitt, a method of measuring a pair of the portion "shape" and "space" and portion of "opaque" and "transparent" is disclosed. However, the length such as the length of the "shape" or width of the "space" is measured, and there is no teaching or suggestion on how to measure the edge width in order to obtain changes of the focus accurately as in the present invention.

Accordingly, the cited references do not teach or suggest the limitations recited in claims 1 and 3. Claim 2 depends from claim 1 and is allowable for at least the reasons provided above with regard to claim 1, and claims 4-6 depend from claim 3 and are allowable for at least the reasons provided above with regard to claim 3.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

By _____

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